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ABSTRACT

An investigation was made of possible ethnic differences in academically relevant environmental variables in order to help account for ethnic differences in achievement (in particular, West Indian underachievement) in a town in the British Midlands. Questionnaires were completed by the parents of 35 West Indian, 33 Indian, and 43 nonminority middle school pupils. Academic indices included scores on the Young Nonreaders' Intelligence Test, on reading, and on the National Foundation for Educational Research Verbal Reasoning Tests (twelve-plus exam). Family environment variables included parental relationships with the school, "press for English," long range educational aspirations and expectations for the child, academic environment, and the child's after-school activities. Although ethnic groups differed in academic achievement (West Indians did less well than both Indians and nonminority children), they did not differ on family environment variables with the exception of satisfaction with the child's school and educational aspirations and expectations. Environmental factors were generally related to achievement, but controlling for environmental factors using a hierarchical regression model did not attenuate ethnic group differences on academic indices. (Author/RH)

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Family environment and school achievement: A cross-cultural comparison in a British Midlands town

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EPA, Baltimore MD
April 13, 1884

Problem: To investigate whether there were ethnic differences in academically-relevant environmental variables that could help account for ethnic differences in achievement, in particular West Indian underachievement in a town in England.

Subjects and variables: Subjects were 35 West Indian, 33 Indian, and 43 non-minority middle school pupils in the British Midlands, whose parents completed a questionnaire. Academic indices were scores on the Young Nonreaders' Intelligence Test, reading scores, and scores on the NFER Verbal Reasoning Tests(twelve-plus exam). Family environment variables were: parental relationships with the school, "press for English," long-range educational aspirations and expectations for the child, academic environment, and the child's after-school activities.

Results: Although ethnic groups differed in academic achievement--West Indians did less well than both Indians and non-minority children--for the most part they did not differ on the family environment variables, except for satisfaction with the child's school and educational aspirations and expectations. Environmental factors were generally related to achievement, but controlling for them using a hierarchical regression model did not attenuate ethnic group differences on the academic indices.

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Family environment and school achievement:

A cross-cultural comparison in a British Midlands town

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Presented at the meetings of the Eastern Psychological Association,

Baltimore, Maryland, April 13, 1984.

The study I'm going to talk about today was an investigation of the relationship of family environment variables to ability and achievement measures in a sample of West Indian, Indian, and non-minority middle school pupils in England. In another paper, by Scarr et al(Scarr, Caparulo, Ferdman, Tower, & Caplan, 1983) published last year in the British Journal of Developmental Psychology, we documented that in this particular town in England, West Indian

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children weren't achieving at the same levels as non-minority children in the same schools. Although the problem wasn't as severe among the Indians, they also didn't score as high as the non-minority children on some measures. This pattern followed that found in other studies in England. We became interested, together with the Community Relations Council of the town and members of the West Indian community, in finding mediators of ethnic differences that might aid in planning interventions that would help improve the performance of minority children in middle school and thereby increase their chances for selection into the higher tracks in secondary school.

In this study, we focused in particular on the family learning environment. Some research on minority groups in Britain and some investigations of ethnic group differences in achievement in other countries suggested differences in family environments as potential mediators of school achievement. For example, Marjoribanks, in studies conducted in Australia and Canada, found a relationship between children's achievement in school and their "family learning environment," defined by variables that included parents' satisfaction

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with their child's school, long-range educational aspirations and expectations for the child, "press for English," and involvement in educational activities.

In this study, we included these variables, as well as parental involvement with the child's school, as indicated by reported frequency of visits, and the child's academically-relevant activities. We compared West Indian, Indian, and non-minority groups on these variables, measured using a parental questionnaire; then we related these data to children's achievement and ability scores to assess the extent to which ethnic differences could be accounted for.

I should mention at this point that this was originally conceived of as an exploratory study for a broader investigation into the correlates of school achievement of minority children. As with many such projects, however, further funding was not available, and we were forced to stop after the pilot phase.

We obtained academic information from school record cards for 71 West Indian, 56 Indian, and 70 non-minority pupils at a middle school

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located in a working class neighborhood of a small British Midlands city. We examined scores on the Young Nonreaders' Intelligence Test, administered when children are 8+ years of age, and reading scores, administered throughout middle school. School officials provided demographic information about the children, including ethnicity and year in school. Scores on the NFER Verbal Reasoning Test were obtained from county education officials. This test is referred to as the twelve plus exam and is administered in the last year of middle school. Scores on this test are used to track children for secondary school.

Information on family environment variables was obtained for a subsample of 111 children(35 West Indian, 33 Indian, 43 non-minority) whose parents filled out a three-page, 32-item, questionnaire sent home with the children. The overall response rate for the questionnaire was approximately 55%. The questionnaire was designed to tap the variables I mentioned as constituting the family learning environment; we included items adapted from Marjoribanks's(1979) Family Environment Schedule and from Schaefer and Edgerton's(Note 1)

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Parent as Educator Interview, as well as items written after consultation with school officials and community relations workers.

The major concern of the study was to find out whether there were ethnic differences in academically-relevant environmental variables that could help to account for ethnic differences in achievement. To do this we were interested in first replicating the achievement differences found in the larger study. After this, we asked, 1) whether ethnic groups differed on the environmental variables, 2) whether these variables were actually associated with the academic indices, and 3) whether these relationships were different across ethnic groups. To preview what we found: although the ethnic groups differed in academic achievement, they did not differ, for the most part, on the family environment variables. Moreover, any differences that did occur failed to account for the achievement differences, even though the environmental variables were generally correlated with achievement.

Table 1 presents group comparisons on the academic indices. Ethnic groups differed in their performance on these academic indices, for

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the most part following the pattern we found in the comprehensive survey of all minority children and a sample of non-minority children in the same community. That is, generally, West Indian children did less well than non-minority children. However, Indian children improved with age, so that on verbal IQ at 8+ years of age they scored lower than non-minorities, in reading scores at all ages they did about as well, and on the twelve-plus exams they did better.

We did analyses to compare academic information for the children of those returning the parents' questionnaire with that of those failing to return it. Both in the complete sample and within each ethnic group, there were no significant differences on the academic variables between children of respondents and non-respondents.

On the environmental and attitudinal variables, the ethnic groups were more similar than they were different. In general, we didn't find significant ethnic group differences on these supposedly academically-relevant aspects of the family environment. The variables we failed to find differences on included: reported number of visits to the school; 4 out of a set of 5 items tapping into the

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academic environment in the home--for example, how many books the parent bought for the child recently; and academically-relevant activities of the child, for example the amount of time spent studying or watching TV after school. There were a few variables, though, on which we did find differences, and these are presented in Table 2. West Indians were more critical of their child's school than either Indian or non-minority parents. Minority parents had higher educational aspirations and expectations for their children than non-minority parents. That is, Indian and West Indian parents both wanted and expected their children to go further in their schooling than parents of non-minority children in the same school. And Indian parents expected their children to spend more time every day on their studies than non-minority parents did. (West Indians fell in between on this variable.)

Our next step was to relate these variables to the academic indices. We did a series of hierarchical regressions with each of the three academic variables as the dependent variables: Young's IQ, average reading coefficient, and twelve-plus score. For each of these

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regressions, we first entered the set of environmental variables. This tested whether, collapsing across ethnic groups, these variables were related to the academic indices. Next, we put ethnicity information into the equation, coded as dummy variables. This step tested whether, when the particular set of environmental variables was held constant, ethnic groups continued to differ on the reading and intelligence measures. Finally, we looked at the interaction of ethnicity and environment in predicting the academic indices. If the interaction term was significant, this would indicate that the set of environmental variables predicted achievement differently across ethnic groups.

Tables 3 and 4 show the results of the hierarchical regressions with two of the sets of environmental variables. Three of the five sets of environmental variables were significantly associated with at least one of the academic indices. These were the child's after-school activities, the parents' relationship to the school, and the parents' long-range educational aspirations and expectations for their child. For example, if you look at Table 4, the first line under

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"twelve-plus scores", shows that educational aspirations and expectations accounted for 27% of the variance in twelve-plus scores.

Nevertheless, controlling statistically for these environmental factors failed to attenuate ethnic differences in achievement. In fact, in the case of parental relationships to the child's school and parental educational aspirations and expectations for the child, controlling for these factors did have an effect on ethnic differences in achievement: the differences became more pronounced. For example, once we held parental relationship to the school constant, the magnitude of ethnic differences in Young's IQ and in twelve-plus scores actually increased. (Indians did better relative to the other two groups once we covaried out the environmental variables.)

We found the same result for educational aspirations and expectations. Ethnicity accounted for 24.1% of the total variance in Young's IQ scores when parental academic views were controlled, compared to 12.4% without covarying out aspirations and expectations. What this means is that within similar levels of parental educational expectations, minority children had an even wider gap with the non-

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minority children. For example, if one takes parents of all ethnic groups who want their children to go to college, the lower achievement of West Indians becomes more pronounced. This effect was also present for twelve-plus scores, and to a lesser degree, for reading scores.

In general, the environmental factors included in the study were similarly related to the academic indices across ethnic groups. This means that we did not find interactions of ethnicity with environmental variables in predicting the academic indices. An exception was parental relationship to school, comprised by satisfaction with the school and reported number of visits to the school in the last year. Ethnic groups differed in the extent to which this factor predicted reading achievement. Among Indians, but not in the other groups, satisfaction with the child's school was negatively associated with reading scores. That is, Indian parents less satisfied with the school tended to have children with higher reading scores. This wasn't true for the two other groups. Also, among minorities, reading scores were positively associated with reported parental visits to school, while in the non-minority group

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the association was negative.

The results of the study suggest that ethnic differences in achievement cannot readily be blamed on group differences in family environments as measured in this study. Although the environmental variables generally predicted the academic indices, they could not adequately account for ethnic differences on the same indices. I take this to mean that West Indian underachievement cannot be attributed solely to some sort of parental failure to provide the proper environment for school achievement.

Moreover, if the relationship of environmental factors and achievement is similar across ethnic groups, as the results of this study suggest, with one exception, then a group-level explanation for a group's depressed performance is necessary. That is, there may be factors that affect all group members to a similar degree, for example treatment of the children in school and in the community as a function of ethnic membership. To the extent that it is true that minority children need "more" of a given environmental factor, for example parental involvement, to achieve at the same level as non-minority

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children, it suggests that interventions will not accomplish the desired effects by focusing solely on such types of factors, unless minority children are given an even greater dose of "it" than other children.

The conclusions of this study are limited by the self-report nature of the measures, the small number of variables investigated, and the small sample size. Notheless, the results highlight the danger of facile assumptions about the reasons for the scholastic underachievement of some minority groups.

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TABLE 3

Means on Academic Indices, by Ethnicity

		Ethnic group: West Indian	Indian	Non-minority	Overall F-ratio	df	p-level
Young Non-Reader's IQ		101.4(52)	101.4(34)	108.2(58)	4.69	2,141	.01
	SD	11.8	10.0	15.4			
Average reading coefficient		.9978(69)	1.0603(49)	1.0677(64)	4.70	2,179	.01
	SD	.1494	.1122	.1564			
Twelve-plus exam score		191.9(25)	222.9(15)	205.1(17)	7.10	2, 54	<.002
	SD	26.8	16.7	28.6			

Note. Cell n's are in parentheses.

TABLE 4

Means on Parental Attitude Items, by Ethnicity

		Ethnic group: West Indian	Indian	Non-minority	Overall F-ratio	df	p-level
Satisfaction with the child's school*		2.72(31)	3.01(32)	3.23(43)	8.75	2,103	<.0005
	SD	.52	.40	.58			
Educational aspirations		4.97(33)	5.61(33)	3.88(41)	11.69	2,104	<.0001
	SD	1.49	1.32	1.78			
Educational expectation		4.48(29)	5.25(32)	2.92(40)	17.94	2, 98	<.0001
	SD	1.45	1.54	1.93			
Amount of study time expected		3.79(34)	4.42(33)	3.49(41)	3.35	2,105	<.04
	SD	1.89	1.52	1.27			

Note. Cell n's are in parentheses.

* This score is the mean response on 16 items. Higher numbers indicate greater satisfaction.

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TABLE 3

Hierarchical Regression of Academic Indices on Parental Relationships to the School, Ethnicity, and their Interaction.

	df	R^2	Adj. R^2	p-level	delta-R^2	F	p-level
Young Non-readers IQ(n=74)							
Parental relationship to school (A)	2	.091	.065	<.02	.091	3.55	<.02
Ethnicity (B)	2	.157	.108	<.02	.066	2.70	<.05
A X B	4	.177	.075	<.10	.02	<1	ns
Average reading coefficient(n=99)							
Parental relationship to school (A)	2	.030	.010	ns	.030	1.50	ns
Ethnicity (B)	2	.054	.014	ns	.024	1.20	ns
A X B	4	.166	.091	<.03	.111	3.00	<.05
Twelve-plus scores(n=42)							
Parental relationship to school (A)	2	.073	.025	ns	.073	1053	ns
Ethnicity (B)	2	.296	.220	<.01	.223	5.85	<.01
A X B	4	.328	.165	<.0[illegible]	.032	<1	ns

TABLE 4

Hierarchical Regression of Academic Indices on Educational Aspirations and Expectations, Ethnicity, and their Interaction.

	df	R^2	Adj. R^2	p-level	delta-R^2	F	p-level
Young Non-readers IQ(n=74)							
1.Educational aspirations and expectations (A)	2	.066	.040	<.07	.066	2.5[illegible]	<.07
Ethnicity (B)	2	.307	.267	<.0001	.241	11.97	<.01
A X B	4	.319	.[illegible]35	<.001	.012	<1	ns
Average reading coefficient(n=99)							
1.Educational aspirations and expectations (A)	2	.055	.035	<.05	.055	2.77	<.05
Ethnicity (B)	2	.106	.068	<.03	.052	2.73	<.10
A X B	4	.185	.113	<.02	.079	2.17	<.10
Twelve-plus scores(n=42)							
1.Educational aspirations and expectations (A)	2	.270	.233	<.001	.270	7.21	<.001
Ethnicity (B)	2	.421	.358	<.001	.151	4.82	<.05
A X B	4	.429	.291	<.01	.008	<1	ns

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